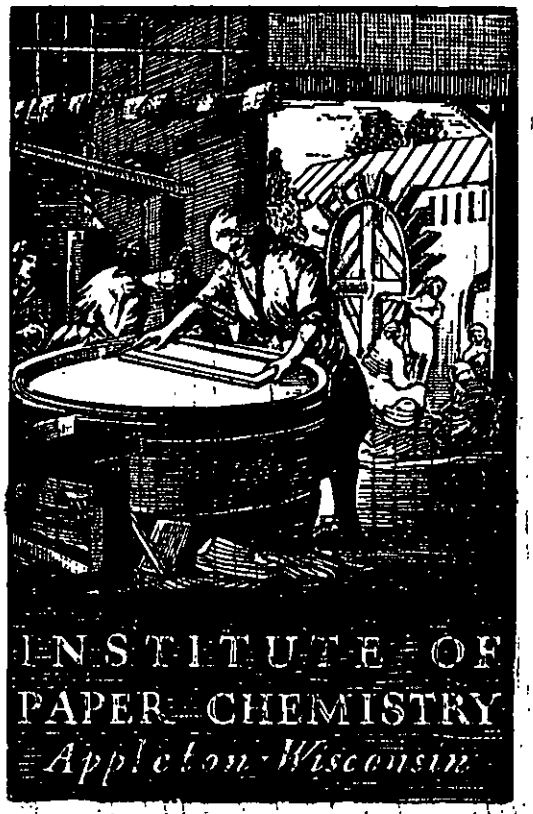

CONTINUOUS BASELINE STUDY

Project 1108-13

Progress Report 130

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

May 1, 1958

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASELINE STUDY

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In conjunction with the F.K.I. Continuous Baseline Study, The Institute of Paper Chemistry has been directed to identify the participating mills by means of a scrambled system of code letters. Under this system, which was initiated in Progress Report 105, each mill is identified by a code letter different from that used for the previous month.

During the month of April, seventy-nine different sample lots of 42-lb. Fourdrinier kraft linerboard from seventeen different F.K.I. mills were processed at The Institute of Paper Chemistry. A tabulation of the number of samples classified according to mill may be seen in Table I.

TABLE I

DISTRIBUTION OF 42-LB. LINERBOARD SAMPLES

Mill Code	Samples Submitted
A	0
B	9
C	9
D	2
E	4
F	1
G	6
H	4
I	3
J	3
K	8
L	2
M	7
N	6
O	9
P	4
Q	1
S	1
Total	79

These sample lots were tested for basis weight, caliper, bursting strength, and Elmendorf tear. The average strength results for each mill may be seen in Table II and are graphically presented in Figures 1 to 5. In addition to a comparison of the mill averages for the various tests, Table II also shows the current F.K.I. averages, the cumulative F.K.I. averages, and the F.K.I. indexes. The cumulative F.K.I. average is based on the results for the previous twelve months excluding the current period. Hence, in the case of the current report, it covers the period from April 1, 1957, to March 31, 1958. The F.K.I. indexes are obtained as follows:

$$\frac{\text{current F.K.I. average}}{\text{cumulative F.K.I. average}} \times 100 = \text{F.K.I. index (\%)}$$

The F.K.I. index provides a ready means of comparing the current quality with previous results. For example, the current F.K.I. average basis weight is 43.1 lb., and the cumulative F.K.I. average basis weight is also 43.1 lb. Hence, the F.K.I. index for basis weight determined in per cent as indicated above is 100.0% and signifies that the current F.K.I. average basis weight is the same as the cumulative F.K.I. average.

A comparison of the results in Table II and Figure 1 shows that the average basis weight results for all mills conform to the 42-lb. specification set forth in Rule 41. Mills L and Q shared the highest average basis weight, 44.5 lb. or approximately 6.0% higher than the 42-lb. specification. The lowest average basis weight of 42.2 lb., which was approximately 0.5% higher than the 42-lb. specification, was shared by Mills E and S.

The amount by which the mills vary from the 42-lb. specification is as follows:

Mill Code	Per Cent
A	--
B	+1.7
C	+2.6
D	+3.6
E	+0.5
F	+1.0
G	+2.1
H	+1.0
I	+1.7
J	+2.9
K	+2.4
L	+6.0
M	+2.6
N	+2.9
O	+5.0
P	+2.9
Q	+6.0
S	+0.5

A comparison of the average basis weight data for the previous period with the current F.K.I. average indicated that the basis weight results have decreased slightly from 43.4 lb. to 43.1 lb.

A comparison of the average caliper values for the various mills (see Figure 2) shows that the current mill averages varied from a low of 11.6 points for Mill S to a high of 13.8 points for Mill L. The current F.K.I. average is 12.6 points, slightly lower than the cumulative F.K.I. average of 12.7 points, as indicated by the F.K.I. index of 99.2%.

The average bursting strength values obtained for each mill are graphically presented in Figure 3. It may be observed in Table II and Figure 3 that the current mill averages for bursting strength ranged from

a low of 103 for Mill L to a high of 120 for Mill C. The current F.K.I. average bursting strength is 112 p.s.i. g., which is the same as the cumulative F.K.I. average.

A graphic comparison of the Elmendorf tear results shown in Table II for the various mills is given in Figures 4 and 5. These presentations show that Mill I had the highest average machine direction tear value of 370 g./sheet and that Mill P had the lowest value of 273 g./sheet. It may be further noted in Table II that the highest cross-machine direction tear value of 412 g./sheet was associated with Mill I and that the lowest value of 341 g./sheet was associated with Mill P. It may be observed also that the current F.K.I. average for machine-direction Elmendorf tear is slightly lower than the cumulative and the corresponding average for cross-machine direction Elmendorf tear is slightly higher than the cumulative.

A comparison of the F.K.I. indexes indicates that, for the current period, the current F.K.I. averages for basis weight and bursting strength are the same as their cumulative F.K.I. averages, whereas the current F.K.I. averages for caliper and machine direction Elmendorf tear are slightly lower than their cumulative F.K.I. averages, and the current F.K.I. average for cross-machine direction Elmendorf tear is slightly higher than its cumulative F.K.I. average.

In order to compare the variation within a given mill, the test results for each particular mill have been tabulated in Tables III to XX for Mills A and S, respectively.

The results obtained on special drum stock are presented in Table XXI.

In addition to the current and cumulative average, the mill factor and mill index are given for each mill. The cumulative mill average is the average test result obtained on the samples submitted by the particular mill for the previous twelve months excluding the current period. The mill factor and the mill index are obtained as follows:

$$\frac{\text{current mill average}}{\text{cumulative mill average}} \times 100 = \text{mill factor (\%)}$$

$$\frac{\text{current mill average}}{\text{cumulative F.K.I. average}} \times 100 = \text{mill index (\%)}$$

The mill factor and the mill index are a convenient means for comparing the current mill results either with the previous results for that particular mill or with the cumulative F.K.I. results. The reports also present a comparison of the test data obtained at the mills with test data obtained at The Institute of Paper Chemistry. These test data are presented and discussed on subsequent pages of this report.

It may be noted in Tables III through XXI that the test data include information about the sheet finish. The summarized results for the mills which submitted sample lots during the current period are as follows:

Mill Code	No. of Sample Lots W.F.	D.F.	Misc.
A	No sample submitted.		
B	9		
C	9		
D	2		
E	4		
F	1[a]		
G	6		

(Continued on the following page)

Mill Code	No. of Sample Lots W.F.	D.F.	Misc.
H	4[a]		
I	3		
J	3[a]		
K	8[b]		
L	2		
M	7		
N	6		
O	9		
P	4		
Q			1[b]
R[c]	1		

[a] One side.
[b] Natural.
[c] Drum linerboard.

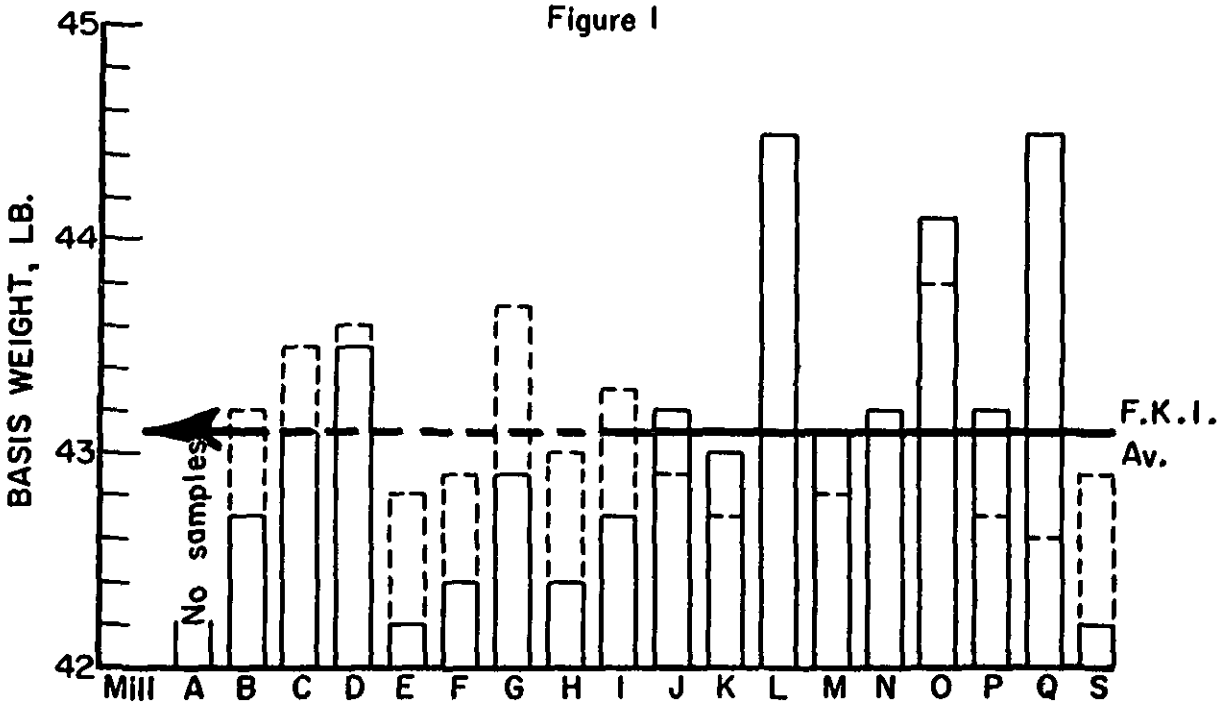
The results indicate that the majority of the participating mills are using a water finish on their 42-lb. linerboard.

TABLE II

SUMMARY OF COMPOSITE MILL AVERAGES--APRIL 1 THROUGH APRIL 30, 1958

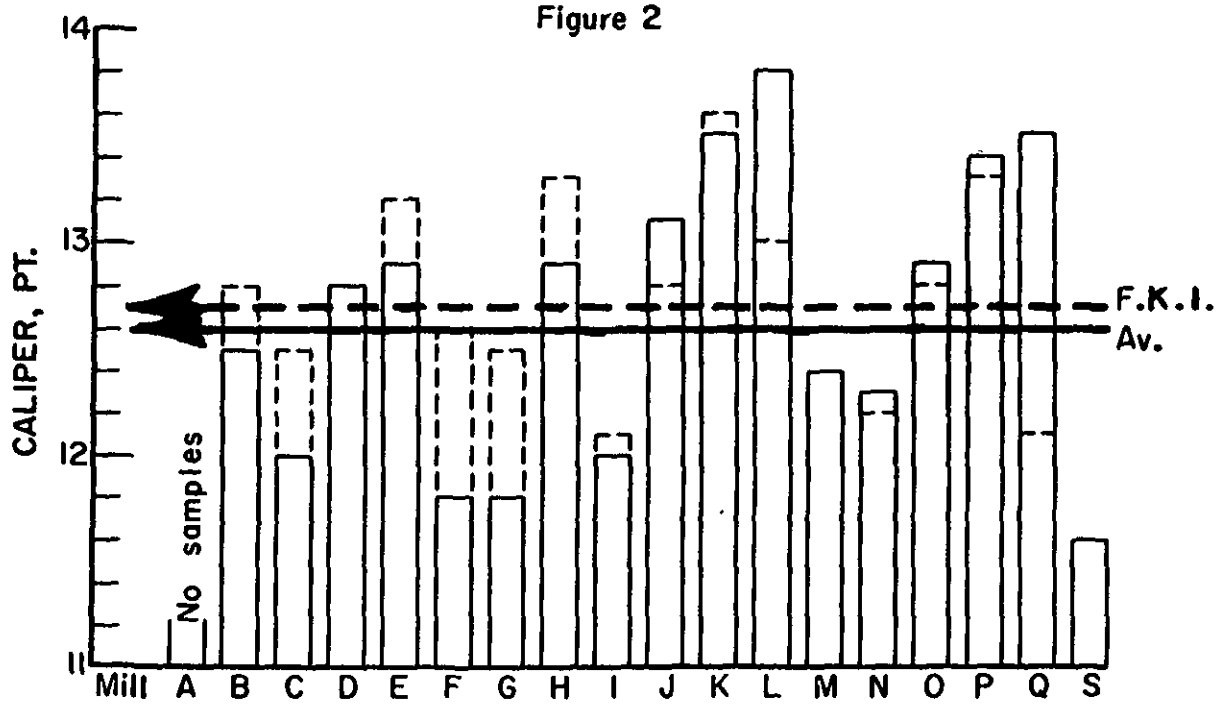
Mill	Basis Weight, lb.	Caliper, points	Bursting Strength, p.s.i. gage	Elmendorf Tear, g./sheet	
				In Machine	Cross Machine
A	No samples submitted during the past 12 months.				
B	42.7	12.5	112	336	386
C	43.1	12.0	120	328	384
D	43.5	12.8	112	295	360
E	42.2	12.9	104	349	371
F	42.4	11.8	112	308	406
G	42.9	11.8	115	353	392
H	42.4	12.9	110	305	354
I	42.7	12.0	113	370	412
J	43.2	13.1	112	290	358
K	43.0	13.5	117	351	375
L	44.5	13.8	103	357	401
M	43.1	12.4	112	312	375
N	43.2	12.3	112	355	366
O	44.1	12.9	106	337	358
P	43.2	13.4	113	273	341
Q	44.5	13.5	112	353	406
S	42.2	11.6	110	365	385
Current FKI Average:	43.1	12.6	112	331	378
Cumulative FKI Average:	43.1	12.7	112	333	372
FKI Index, %	100.0	99.2	100.0	99.4	101.6

Figure 1



COMPARISON OF BASIS WEIGHT RESULTS
(Period Apr. 1 - Apr. 30, 1958)

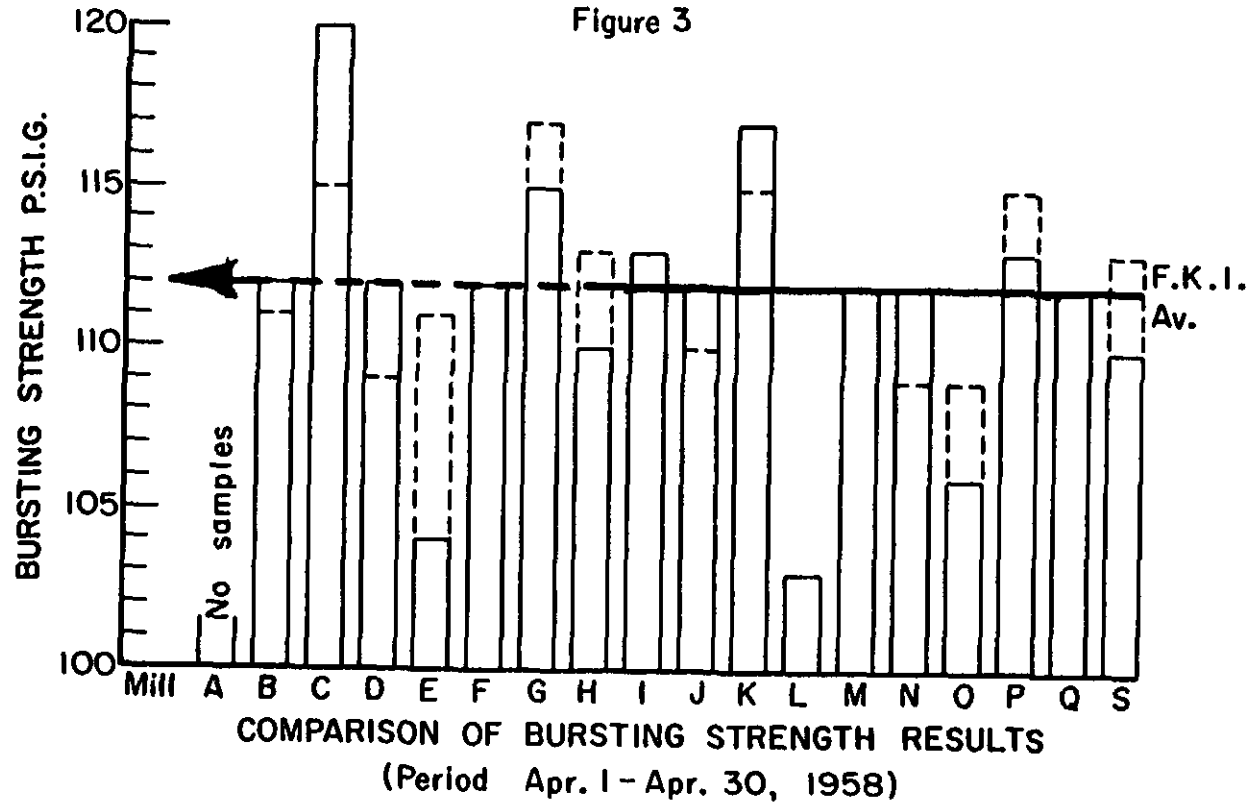
Figure 2



COMPARISON OF CALIPER RESULTS
(Period Apr. 1 - Apr. 30, 1958)

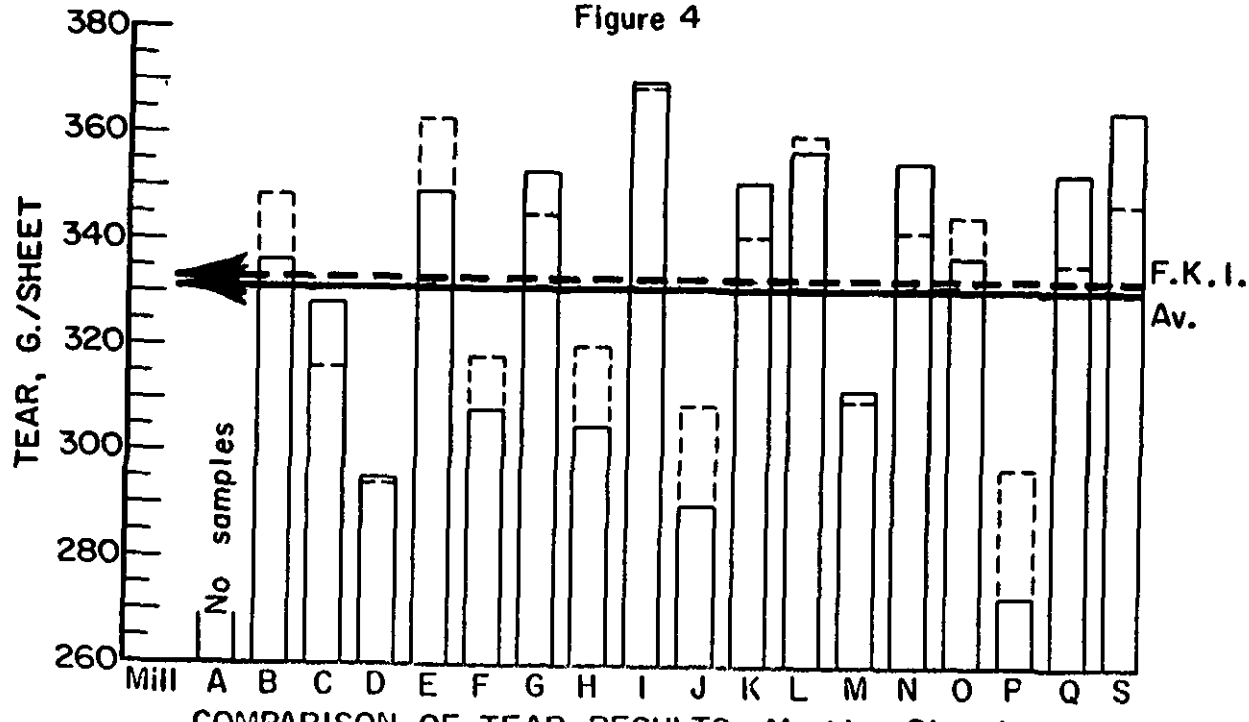
——— Current mill average
- - - - - Cumulative mill average

Figure 3



COMPARISON OF BURSTING STRENGTH RESULTS
(Period Apr. 1 - Apr. 30, 1958)

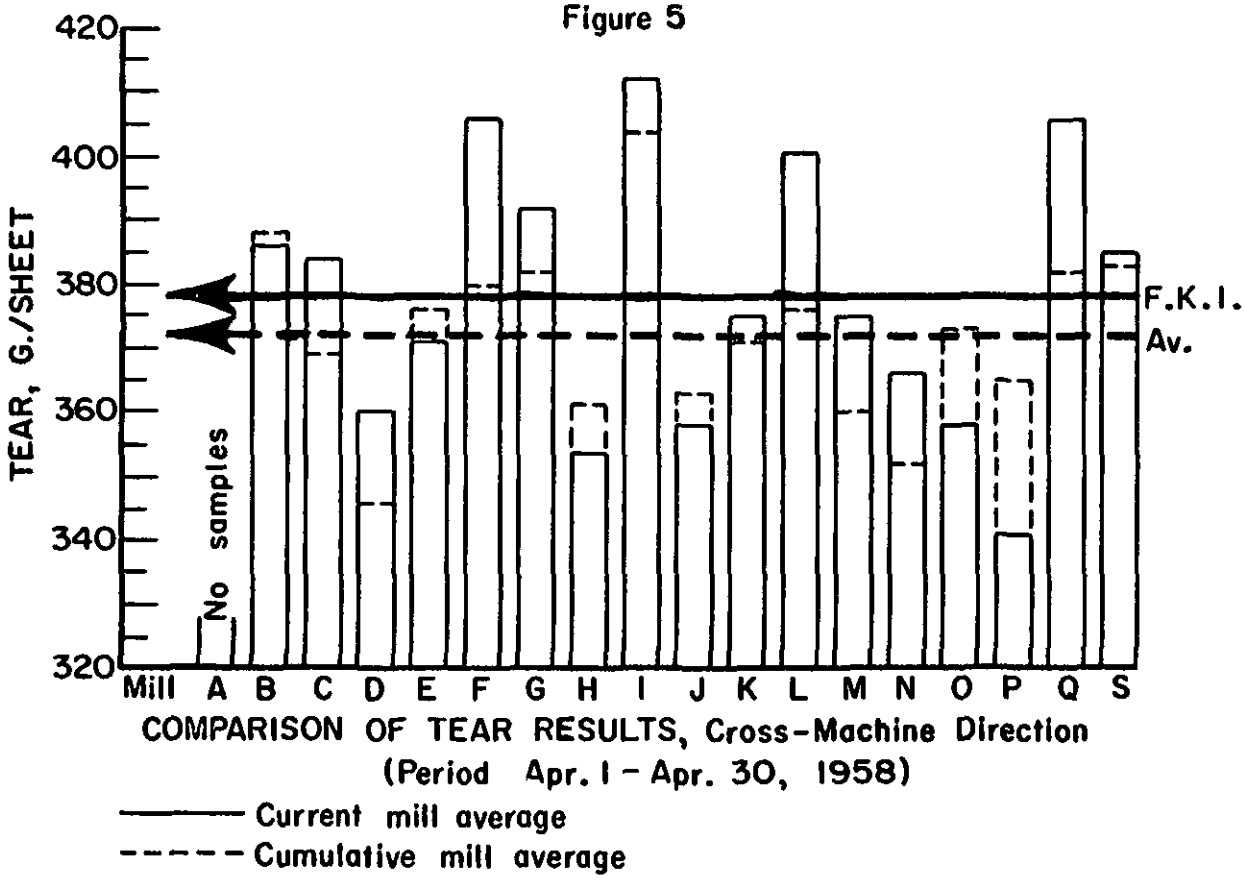
Figure 4



COMPARISON OF TEAR RESULTS, Machine Direction
(Period Apr. 1 - Apr. 30, 1958)

——— Current mill average
– – – – – Cumulative mill average

Figure 5



COMPARISON OF TEAR RESULTS, Cross-Machine Direction
(Period Apr. 1 – Apr. 30, 1958)

——— Current mill average
– – – – – Cumulative mill average

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958

TABLE III

MILL A -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
No samples submitted.																			

TABLE IV

MILL B -- 42-LB. LINERBOARD

178122	F	4/ 1/58	3/ 9/58	2	44.0	42.8	43.3	13.2	12.6	13.0	135	88	111	408	312	362[a]	448	360	400[a]
178123	F.	4/ 1/58	3/10/58	2	44.0	43.0	43.5	13.2	12.4	12.8	137	104	123	360	280	333[a]	440	344	396[a]
178127	F	4/ 1/58	3/18/58	2	42.8	40.8	41.9	13.1	12.0	12.6	136	85	113	384	280	339[a]	456	376	413[a]
178382	F	4/16/58	3/30/58	2	43.8	42.4	43.1	12.7	11.8	12.3	128	90	113	416	320	355[a]	448	336	377[a]
178389	F	4/16/58	4/ 5/58	2	44.0	42.4	43.4	12.4	12.0	12.1	131	90	114	384	312	351	432	368	391[a]
178430	F.	4/21/58	4/ 8/58	2	43.2	42.2	42.4	12.6	12.0	12.3	132	89	112	376	272	320[a]	440	328	379[a]
178431	F	4/21/58	4/10/58	2	43.0	41.6	42.3	12.6	12.1	12.3	130	83	108	328	272	300	416	336	371[a]
178432	F.	4/21/58	4/14/58	2	42.6	42.0	42.2	12.8	12.0	12.3	137	80	108	368	272	326	416	336	373[a]
178433	F.	4/21/58	4/15/58	2	42.4	42.0	42.2	13.1	12.1	12.6	130	85	106	400	304	338[a]	424	320	375[a]
Current Mill Average.							42.7			12.5			112			336			386
Cumulative Mill Average.							43.2			12.8			111			348			388
Mill Factor, %							98.8			97.7			100.9			96.6			99.5
Mill Index, %							99.1			98.4			100.0			100.9			103.8

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE V

MILL C -- 42-LB. LINERBOARD

Sale No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
178116	W.F.	4/ 1/58	3/22/58	2	44.6	42.6	43.8	12.2	11.3	11.7	136	103	120	352	288	321[a]	416	352	385[a]
178117	W.F.	4/ 1/58	3/22/58	2	44.4	43.4	44.0	12.8	11.3	11.9	140	105	123	352	296	327[a]	424	360	387[a]
178120	W.F.	4/ 1/58	3/23/58	2	43.2	42.0	42.6	12.2	10.9	11.8	136	103	120	344	280	314[a]	424	360	394[a]
178121	W.F.	4/ 1/58	3/24/58	2	43.8	42.4	43.3	12.4	11.4	12.0	135	101	120	360	264	335[a]	432	352	387[a]
178278	W.F.	4/ 9/58	3/30/58	2	43.4	41.4	42.5	12.1	11.3	11.8	143	95	121	368	256	321	384	328	361[a]
178279	W.F.	4/ 9/58	3/30/58	2	44.0	42.0	42.6	12.2	11.4	11.9	143	96	122	368	288	320	400	336	369[a]
178354	W.F.	4/14/58	4/ 6/58	2	43.8	42.2	42.9	11.9	10.9	11.5	137	99	122	352	280	318[a]	400	360	382[a]
178355	W.F.	4/14/58	4/ 7/58	1	42.4	41.8	42.1	12.6	11.7	12.2	148	87	120	400	288	333[a]	424	368	391[a]
178492	W.F.	4/24/58	4/13/58	1	44.0	43.0	43.8	13.3	12.0	12.7	133	95	115	448	312	361[a]	432	384	401[a]
Current Mill Average							43.1			12.0			120			328			384
Cumulative Mill Average:							43.5			12.5			115			316			369
Mill Factor, %							99.1			96.0			104.3			103.8			104.1
Mill Index, %							100.0			94.5			107.1			98.5			103.2

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE VI

MILL D -- 42-LB. LINERBOARD

File No	Finish	Date Recd.	Date Made	Mch No	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
178118	W.F	4/ 1/58	3/17/58	1	44.4	42.6	43.6	13.3	12.3	12.8	135	88	110	328	248	305	400	344	365[a]
178119	W.F	4/ 1/58	3/20/58	1	44.2	42.2	43.4	13.3	12.2	12.8	136	90	114	352	240	285[a]	384	320	355[a]
Current Mill Average							43.5			12.8			112			295			360
Cumulative Mill Average							43.6			12.8			109			294			346
Mill Factor, %							99.8			100.0			102.8			100.3			104.0
Mill Index, %							100.9			100.8			100.0			88.6			96.8

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE VII

MILL E -- 42-LB. LINERBOARD

File No.	Finish	Date Rec'd	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
178275	W.	4/ 3/58	3/14/58	4	43.0	41.4	42.3	13.2	12.3	12.8	113	89	101	400	320	360[a]	432	336	368[a]
178276	W.	4/ 3/58	3/20/58	2	43.4	41.8	42.2	13.4	13.0	13.1	127	85	106	368	320	352	408	352	386[a]
178358	W.	4/14/58	3/25/58	4	43.6	41.8	42.5	12.9	12.0	12.4	121	89	106	368	304	340	416	320	369[a]
178359	W.	4/14/58	4/ 1/58	2	43.6	40.6	41.8	14.0	12.8	13.3	124	84	103	400	304	344[a]	384	336	363[a]
Current Mill Average.							42.2			12.9			104			349			371
Cumulative Mill Average							42.8			13.2			111			363			376
Mill Factor, %							98.6			97.7			93.7			96.1			98.7
Mill Index, %							97.9			101.6			92.9			104.8			99.7

TABLE VIII

MILL F -- 42-LB. LINERBOARD

178126	Wire	4/ 1/58	3/20/58	1	43.0	41.6	42.4	12.3	11.2	11.8	125	99	112	336	280	308[a]	448	352	406[a]
Current Mill Average							42.4			11.8			112			308			406
Cumulative Mill Average							42.9			12.6			112			318			380
Mill Factor, %							98.8			93.7			100.0			96.9			106.8
Mill Index, %							98.4			92.9			100.0			92.5			109.1

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE IX

MILL G -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
178186	W.F.	4/ 4/58	3/23/58	-	43.8	42.4	43.0	12.1	11.0	11.5	135	102	117	408	312	363[a]	416	344	387[a]
178187	W.F.	4/ 4/58	3/23/58	-	43.2	42.0	42.5	11.8	10.4	11.2	135	87	113	392	312	350[a]	416	360	391[a]
178188	W.F.	4/ 4/58	3/24/58	-	44.0	42.0	42.9	12.4	11.1	11.9	136	92	114	408	304	359[a]	448	368	393[a]
178189	W.F.	4/ 4/58	3/24/58	-	44.0	42.2	43.2	12.4	11.7	12.1	136	97	118	424	312	351[a]	456	336	394[a]
178190	W.F.	4/ 4/58	3/28/58	-	43.6	41.6	42.8	12.7	11.8	12.1	133	101	117	408	312	363[a]	448	352	402[a]
178191	W.F.	4/ 4/58	3/28/58	-	43.6	42.0	42.8	13.0	11.1	12.1	136	82	111	368	296	331[a]	416	344	384[a]
Current Mill Average							42.9			11.8			115			353			392
Cumulative Mill Average							43.7			12.5			117			345			382
Mill Factor, %							98.2			94.4			98.3			102.3			102.6
Mill Index, %							99.5			92.9			102.7			106.0			105.4

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE X

MILL H -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
178356	WFlS	4/14/58	3/31/58	1	42.2	41.0	41.7	13.2	12.0	12.7	131	91	113	336	240	302[a]	376	328	347[a]
178357	WFlS	4/14/58	3/31/58	1	42.2	41.4	41.7	13.1	12.0	12.5	140	96	113	320	240	293	368	320	337[a]
178416	WFlS	4/13/58	4/13/58	1	44.0	42.2	43.4	13.7	12.6	13.1	126	90	108	368	296	325	432	336	374[a]
178434	WFlS	4/21/58	4/14/58	1	43.6	42.0	42.7	14.1	12.2	13.2	127	87	108	376	208	299[a]	392	320	359[a]
Current Mill Average							42.4			12.9			110			305			354
Cumulative Mill Average							43.0			13.3			113			320			361
Mill Factor, %							98.6			97.0			97.3			95.3			98.1
Mill Index, %							98.4			101.6			98.2			91.6			95.2

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XI

MILL I -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
178201	W.B.	4/ 7/58	3/12/58	-	44.0	42.0	42.6	12.9	11.8	12.2	124	92	109	424	336	378	480	384	417[a]
178202	W.B.	4/ 7/58	3/18/58	-	44.0	41.8	43.0	13.0	11.8	12.1	130	83	112	400	328	363	440	360	411[a]
178203	W.B.	4/ 7/58	3/18/58	-	44.0	42.0	42.5	12.2	11.0	11.7	132	105	118	432	320	367	480	352	407[a]
Current Mill Average.							42.7			12.0			113			370			412
Cumulative Mill Average:							43.3			12.1			112			369			404
Mill Factor, %							98.6			99.2			100.9			100.3			102.0
Mill Index, %							99.1			94.5			100.9			111.1			110.8

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XII

MILL J -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
178277	WF1S	4/ 8/58	3/31/58	1	43.6	41.4	42.3	13.0	12.2	12.6	136	90	115	336	256	292	384	320	345[a]
178460	WF1S	4/22/58	4/ 7/58	1	45.0	44.0	44.1	13.9	12.9	13.3	143	85	111	352	240	292[a]	416	336	381[a]
178461	WF1S	4/22/58	4/ 8/58	1	44.0	42.0	43.1	14.2	12.8	13.4	133	90	110	352	256	286[a]	368	328	349[a]
Current Mill Average:							43.2			13.1			112			290			358
Cumulative Mill Average							42.9			12.8			110			309			363
Mill Factor, %							100.7			102.3			101.8			93.9			98.6
Mill Index, %							100.2			103.1			100.0			87.1			96.2

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XIII

MILL K -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
178179	WFlS	4/ 2/58	3/23/58	2	45.0	43.2	44.0	14.2	13.2	13.9	147	108	130	408	320	341[a]	432	360	392[a]
178180	WFlS	4/ 2/58	3/24/58	2	44.2	42.4	43.3	14.0	13.2	13.6	142	95	118	448	328	375[a]	416	328	371[a]
178181	WFlS	4/ 2/58	3/26/58	2	42.2	39.4	41.1	13.3	12.2	12.8	131	90	112	416	328	367[a]	424	312	349[a]
178182	WFlS	4/ 2/58	3/27/58	2	44.6	42.8	43.6	14.3	13.6	14.0	135	100	116	384	320	355[a]	424	352	379[a]
178360	WFlS	4/14/58	4/ 6/58	2	44.0	43.4	43.8	13.5	12.8	13.2	136	87	117	360	304	333[a]	392	328	367[a]
178361	WFlS	4/14/58	4/ 7/58	2	42.4	41.4	42.0	13.1	12.4	12.8	135	88	113	400	320	361[a]	416	344	382[a]
178511	WFlS	4/25/58	4/16/58	2	44.0	42.0	43.3	14.2	13.0	13.7	137	100	118	368	288	325[a]	448	352	386[a]
178512	WFlS	4/25/58	4/17/58	2	44.0	42.0	43.2	14.0	13.0	13.6	130	87	113	416	304	349[a]	432	328	373[a]
Current Mill Average:							43.0			13.5			117			351			375
Cumulative Mill Average							42.7			13.6			115			341			371
Mill Factor, %							100.7			99.3			101.7			102.9			101.1
Mill Index, %							99.8			106.3			104.5			105.4			100.8

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XIV

MILL L -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
179183	S F	4/ 3/58	3/21/58	7	45.2	43.8	44.6	14.2	12.8	13.8	118	75	98	400	296	340[a]	448	360	391[a]
178381	S F.	4/16/58	3/31/58	7	45.4	44.0	44.5	14.1	13.3	13.8	134	81	108	424	304	375[a]	464	368	411[a]
Current Mill Average:							44.5			13.8			103			357			401
Cumulative Mill Average							43.1			13.0			103			360			376
Mill Factor, %							103.2			106.2			100.0			99.2			106.6
Mill Index, %							103.2			108.7			92.0			107.2			107.8

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XV

MILL M -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
178204	W.F.	4/ 7/58	3/25/58	2	43.8	42.0	43.0	13.2	11.9	12.4	133	90	112	336	256	305[a]	384	344	359[a]
178205	W.F.	4/ 7/58	3/26/58	2	42.6	41.4	42.0	12.8	12.0	12.3	134	87	109	336	256	294	384	328	357[a]
178325	W.F	4/11/58	4/ 1/58	2	44.0	42.0	43.0	12.8	12.0	12.4	142	91	114	352	280	316	440	368	406[a]
178326	W.F.	4/11/58	4/ 1/58	2	44.0	42.4	43.5	12.8	12.1	12.3	130	92	113	352	280	313	408	352	381[a]
178350	W.F.	4/14/58	4/ 2/58	2	44.8	43.8	44.2	13.3	11.6	12.4	138	80	110	440	288	333[a]	448	336	385[a]
178351	W.F.	4/14/58	4/ 2/58	2	43.6	42.4	43.2	13.1	11.6	12.4	128	78	111	344	264	310	400	320	367[a]
178352	W.F.	4/14/58	4/ 4/58	2	44.0	42.0	42.9	13.0	12.0	12.4	133	94	112	360	272	317	432	336	371[a]
Current Mill Average:							43.1			12.4			112			312			375
Cumulative Mill Average							42.8			12.4			112			310			360
Mill Factor, %							100.7			100.0			100.0			100.6			104.2
Mill Index, %							100.0			97.6			100.0			93.7			100.8

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XVI

MILL N -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
178124	W.F.	4/ 1/58	3/14/58	-	44.8	43.2	43.8	13.3	12.4	12.9	127	87	112	424	320	353[a]	416	328	362[a]
178125	W.F	4/ 1/58	3/14/58	-	44.6	43.2	43.8	13.4	12.4	12.9	123	90	113	400	296	348[a]	400	336	364[a]
178384	W F.	4/16/58	4/ 2/58	-	43 2	41.8	42.3	12.7	11.9	12.2	120	93	107	368	320	350	408	352	377[a]
178385	W F	4/16/58	4/ 2/58	-	44.0	42.0	42.8	12.2	11.7	12.0	129	99	113	360	312	329[a]	400	344	367[a]
178493	W.F	4/24/58	4/11/58	-	44.0	42.2	43.4	12.5	11.2	11.9	127	81	112	448	320	371[a]	400	336	359[a]
178494	W F	4/24/58	4/11/58	-	44.0	42.0	43.1	12.1	11.5	11.8	133	87	116	464	320	376[a]	400	336	367[a]
Current Mill Average:							43.2			12.3			112			355			366
Cumulative Mill Average:							43.1			12.2			109			342			352
Mill Factor, %							100.2			100.8			102.8			103.8			104.0
Mill Index, %							100.2			96.9			100.0			106.6			98.4

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XVII

MILL O -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
178302	W.F.	4/10/58	4/ 2/58	-	43.6	42.0	42.6	13.2	12.2	12.6	118	80	101	392	336	353[a]	416	304	356[a]
178303	W.F.	4/10/58	4/ 3/58	-	45.4	44.0	44.4	13.4	12.5	13.0	133	78	106	368	296	329	384	336	364[a]
178324	W.F.	4/11/58	4/ 4/58	-	43.6	42.2	42.9	13.0	12.4	12.8	122	78	105	368	296	331[a]	384	320	352[a]
178388	W.F.	4/17/58	4/ 9/58	-	44.0	42.8	43.6	13.3	12.4	12.8	125	94	108	400	288	339[a]	400	328	367[a]
178389	W.F.	4/17/58	4/10/58	-	44.2	42.6	43.7	13.4	12.3	12.9	124	89	108	400	288	335[a]	376	296	345[a]
178390	W.F.	4/17/58	4/11/58	-	45.0	44.2	44.5	13.6	12.6	13.0	129	86	110	400	320	369[a]	400	336	366[a]
178427	W.F.	4/21/58	4/13/58	-	46.0	44.6	45.5	13.8	13.0	13.3	120	88	105	368	304	336[a]	376	320	350[a]
178428	W.F.	4/21/58	4/14/58	-	46.0	44.0	45.0	13.2	12.6	13.0	124	84	103	368	296	325	400	352	368[a]
178429	W.F.	4/21/58	4/15/58	-	45.6	44.2	44.8	13.0	12.0	12.5	120	85	104	368	272	313	384	320	357[a]
Current Mill Average:							44.1			12.9			106			337			358
Cumulative Mill Average:							43.8			12.8			109			345			373
Mill Factor, %							100.7			100.8			97.2			97.7			96.0
Mill Index, %							102.3			101.6			94.6			101.2			96.2

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XVIII

MILL P -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
178362	W F	4/14/58	2/24/58	1	44.0	42.4	43.5	13.6	12.9	13.3	142	86	112	312	240	275[a]	376	312	342[a]
178363	W F	4/14/58	2/28/58	1	43.6	41.8	42.5	14.3	13.1	13.6	133	85	113	336	240	281[a]	384	320	343[a]
178364	W F	4/14/58	3/ 3/58	1	44.4	42.6	43.2	13.8	12.7	13.2	134	89	116	288	224	265[a]	368	312	336[a]
178365	W F	4/14/58	3/ 6/58	1	44.0	42.8	43.4	13.8	12.9	13.4	140	75	112	320	240	269[a]	384	296	343[a]
Current Mill Average:							43.2			13.4			113			273			341
Cumulative Mill Average:							42.7			13.3			115			297			365
Mill Factor, %							101.2			100.8			98.3			91.9			93.4
Mill Index, %							100.2			105.5			100.9			82.0			91.7

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XIX

MILL Q -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
178115	Nat.	4/ 1/58	3/23/58	2	46.0	43.6	44.5	14.4	13.0	13.5	128	96	112	392	320	353[a]	432	384	406[a]
Current Mill Average:							44.5			13.5			112			353			406
Cumulative Mill Average							42.6			12.1			112			336			382
Mill Factor, %							104.5			111.6			100.0			105.1			106.3
Mill Index, %							103.2			106.3			100.0			106.0			109.1

TABLE XX

MILL S -- 42-LB. LINERBOARD

178353	W.F.	4/14/58	3/30/58	4	42.8	42.0	42.2	11.9	11.2	11.6	122	80	110	432	320	365	416	360	385[a]
Current Mill Average:							42.2			11.6			110			365			385
Cumulative Mill Average:							42.9			11.6			113			347			383
Mill Factor, %							98.4			100.0			97.3			105.2			100.5
Mill Index, %							97.9			91.3			98.2			109.6			103.5

TABLE XXI

MILL R -- 47-LB. DRUM LINERBOARD

No samples submitted.

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

As a supplementary part of the Continuous Baseline Study, comparisons of the mill test results with those obtained at The Institute of Paper Chemistry on corresponding samples have been included in this report. As may be noted in Table XXII, the atmospheric conditions used prior to and during the testing period were relatively uniform for the mills which reported this information. However, the conditioning periods varied considerably.

TABLE XXII

Mill Code	Preconditioning R.H., %	Preconditioning Temp., °F.	Preconditioning Time, hr.	Conditioning R.H., %	Conditioning Temp., °F.	Conditioning Time, hr.
A		No samples submitted.				
B		None		50	73	24
C		None		50	73	24
D	48-76	73-74	0.5	50	73	24
E		None		53	73	--
F		None		53	59	--
G		None		50	73	48
H		None		51-67	78-82	--
I		None		50	72	48
J	46-47	75	24-72	46-47	74-75	2
K	50	72-73	24		None	
L	50	73	24		None	
M	50	73	24	50	73	24
N		None		50	73	0.5
O	34-35	78-79	8	50-52	71-72	16
P		None		54-65	80-86	--
Q	51	73	--	50	73	24
S		None		50	73	3

A summary of the Institute and mill test results for the current period is shown in Table XXIII. and a comparison of differences between Institute and mill test results is given in Table XXIV for the current

period and the two previous periods. The comparisons for individual sample lots are given in Tables XXV to XLII, for the 42-lb. liner samples. A comparison of the special drum stock is given in Table XLIII. In all the comparisons given in Tables XXV to XLIII, the Institute's test values have been used as the reference line.

A comparison of the test data in Tables XXIII and XXIV reveals the level of agreement between mill and Institute data for basis weight, caliper, bursting strength, and Elmendorf tear. Table XXIII shows the over-all average difference between Institute and mill test results based on the data for all sample lots submitted by each mill for the current period. In addition, the maximum difference encountered in comparing the Institute and mill test results for a given sample lot is shown. In Table XXIV, the over-all average differences shown for each test in Table XXIII have been calculated on a percentage basis for each mill. In addition, for purposes of comparison, the average percentage differences for the preceding two periods are shown.

It may be noted in Table XXIV that the maximum average difference (per cent) between the average basis weight results of the Institute and those of a given mill on corresponding samples is one per cent for the current period. By comparison, the maximum average difference (per cent) noted for the previous two periods was three per cent. Further, it may be noted that the average basis weight results for Mills B, E, F, K, L, and N were higher than those for the Institute, and the average results for the other mills were lower. None of the variations appear to be excessive.

The maximum variation in caliper for the current period is six per cent. The maximum variation for the previous two periods was also six per cent.

Compared with the Institute's results, the test results for Mills C and F were the same, the test results for Mills D and G were higher, and the test results for the remaining mills were lower. The variation associated with Mill J appears to be excessive.

It may be noted in Table XXIII that the bursting strength results exhibited a maximum variation of six per cent for the current period. The average results for Mills B, D, E, H, I, L, and N were higher than those for the Institute, the average results for Mills G, M, O, and P were the same, and the results for the other mills were lower. The variation of six per cent associated with Mill F may be excessive.

It may be seen in Tables XXIII and XXIV that the average machine direction tear results for Mills B, C, D, F, H, K, and N were higher than those for the Institute, the average result for Mill L was the same as that for the Institute and the results for the other mills were lower. The maximum variation for the current period was eighteen per cent. For the current period the variations associated with the results for Mills B, H, J, P, and Q appear to be excessive.

With regard to the cross-machine direction tear results, it may be noted that the average results for Mills B, D, E, G, H, K, L, N, and S were higher than those for the Institute, the average result for Mill C was the same as that for the Institute, and the average results for the other mills were lower. The maximum variation for the current period was nineteen per cent. The variations associated with the results for Mills B, H, and K appear to be excessive.

TABLE XXIII

SUMMARY OF TEST RESULT COMPARISONS (AVERAGE MILL AND INSTITUTE RESULTS)

Mills*	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	S
No. Samples Compared	0	9	9	2	4	1	6	4	3	3	8	2	7	6	9	4	1	1
Basis Weight																		
Institute		42.7	43.1	43.5	42.2	42.4	42.9	42.4	42.7	43.2	43.0	44.5	43.1	43.2	44.1	43.2	44.5	42.2
Mill		43.1	42.8	43.2	42.5	42.5	42.6	41.9	42.5	42.6	43.5	44.8	43.2	42.9	44.0	42.7	44.0	42.0
Av. Diff.**		+0.4	-0.3	-0.3	+0.3	+0.1	-0.3	-0.5	-0.2	-0.6	+0.5	+0.3	+0.1	-0.3	-0.1	-0.5	-0.5	-0.2
Max. Diff.***		+0.8	-1.4	-0.3	+0.6	+0.1	-0.5	-1.6	-0.2	-1.3	+1.1	+0.7	-0.5	-0.6	-1.9	-0.7	-0.5	-0.2
Caliper																		
Institute		12.5	12.0	12.8	12.9	11.8	11.8	12.9	12.0	13.1	13.5	13.8	12.4	12.3	12.9	13.4	13.5	11.6
Mill		12.2	12.0	12.9	12.5	11.8	11.9	12.6	11.6	12.3	13.2	13.6	12.1	12.1	12.5	13.0	13.4	11.4
Av. Diff.**		-0.3	0.0	+0.1	-0.4	0.0	+0.1	-0.3	-0.4	-0.8	-0.3	-0.2	-0.3	-0.2	-0.4	-0.4	-0.1	-0.2
Max. Diff.***		-0.4	-0.6	+0.1	-0.5	0.0	+0.2	-0.4	-0.5	-0.9	-0.6	-0.3	-0.4	-0.5	-0.7	-0.6	-0.1	-0.2
Bursting Strength																		
Institute		112	120	112	104	112	115	110	113	112	117	103	112	112	106	113	112	110
Mill		116	119	115	109	105	115	112	116	106	115	108	112	114	106	113	107	107
Av. Diff.**		+4	-1	+3	+5	-7	0	+2	+3	-6	-2	+5	0	+2	0	0	-5	-3
Max. Diff.***		+9	-5	+6	+10	-7	-4	+3	+6	-7	-9	+6	+3	+3	+9	+3	-5	-3
Tearing Strength, in																		
Institute		336	328	295	349	308	353	305	370	290	351	357	312	355	337	273	353	365
Mill		379	329	320	334	335	336	359	341	247	358	357	300	356	305	241	301	352
Av. Diff.**		+43	+1	+25	-15	+27	-17	+54	-29	-43	+7	0	-12	+1	-32	-32	-52	-13
Max. Diff.***		+60	+37	+34	-36	+27	-37	+82	-35	-62	+49	± 5	-28	+24	-49	-42	-52	-13
Tearing Strength, across																		
Institute		386	384	360	371	406	392	354	412	358	375	401	375	366	358	341	406	385
Mill		443	384	387	373	373	399	422	400	350	419	408	352	388	333	334	368	391
Av. Diff.**		+57	0	+27	+2	-33	+7	+68	-12	-8	+44	+7	-23	+22	-25	-7	-38	+6
Max. Diff.***		+74	+43	+32	+19	-33	+36	+95	-20	-23	+69	+29	-43	+44	-56	-14	-38	+6

* Comparison based on averages involved only those samples on which mill test data were submitted.
** Average difference is the difference between the Institute mill average and the mill average based on mill test data.
*** Maximum difference encountered in comparing the Institute average and the mill averages for any sample submitted by that particular mill.

TABLE XXIV

COMPARISON OF INSTITUTE-MILL DIFFERENCES BY PERIODS
Average Differences, per cent

Mill	Period	Basis Weight	Caliper	Burst	Tear, in	Tear, across
A	Current	--	--	--	--	--
	129th	--	--	--	--	--
	128th	--	--	--	--	--
B	Current	+1	-2	+4	+13	+15
	129th	-0.5	-2	+2	+ 7	+ 9
	128th	-0.2	-2	+4	+ 6	+ 9
C	Current	-0.7	0	-0.8	+ 0.3	0
	129th	-2	-2	0	0	0
	128th	-2	-0.8	-3	+ 1	+ 4
D	Current	-0.7	+0.8	+3	+ 8	+ 8
	129th	-2	+2	+2	+ 2	+ 3
	128th	+0.2	0	+3	+ 3	+ 3
E	Current	+0.7	-3	+5	- 4	+ 0.5
	129th	-0.7	-3	0	- 4	+ 3
	128th	-0.5	-2	-2	- 3	+ 0.3
F	Current	+0.2	0	-6	+ 9	- 8
	129th	-0.7	0	-5	+ 6	+ 2
	128th	-0.9	-2	-6	+ 8	+ 4
G	Current	-0.7	+0.8	0	- 5	+ 2
	129th	-0.5	-0.8	0	- 5	+ 3
	128th	0	-2	-0.8	- 1	+ 6
H	Current	-1	-2	+2	+18	+19
	129th	-3	-3	+0.9	- 3	+ 2
	128th	--	--	--	--	--
I	Current	-0.5	-3	+3	- 6	- 3
	129th	-0.7	-3	+0.9	- 4	- 1
	128th	-1	-3	+2	+ 3	+ 4
J	Current	-1	-6	-5	-15	-2
	129th	-3	-5	-2	-13	-4
	128th	-1	-6	-0.9	-22	-5
K	Current	+1	-2	-2	+2	+12
	129th	+0.9	-4	+0.9	+3	+6
	128th	+2	-3	-0.9	+7	+10
L	Current	+0.7	-2	+5	0	+2
	129th	-0.2	-2	+4	+1	+6
	128th	0	-0.8	+4	- 5	+ 4
M	Current	+0.2	-2	0	-4	-6
	129th	-0.2	-2	+2	-2	-4
	128th	+0.2	-3	+5	0	0
N	Current	-0.7	-2	+2	+0.3	+6
	129th	-0.5	-2	-0.9	+3	+9
	128th	-1	-2	-2	+2	+8
O	Current	-0.2	-3	0	-10	-7
	129th	+0.2	-2	+4	-4	-0.8
	128th	-0.2	-5	+1	-9	-6
P	Current	-1	-3	0	-12	-2
	129th	-2	-2	+2	-16	-7
	128th	-2	-2	-3	-5	+2
Q	Current	-1	-0.7	-4	-15	-9
	129th	-2	-6	-11	-14	-7
	128th	0	-3	-2	-9	-3
S	Current	-0.5	-2	-3	-4	+2
	129th	-0.7	-3	-3	-16	-10
	128th	--	--	--	--	--

COMPARISON OF INSTITUTE AND MILL DATA--APRIL 1 THROUGH APRIL 30, 1958

TABLE XXV

MILL A -- 42-LB. LINERBOARD

File	Finish	Date Made	Mch. No.	Basis Weight, lb			Caliper, points			Bursting Strength p.s.i. gage			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
No samples submitted																		

TABLE XXVI

MILL B -- 42-LB. LINERBOARD

178122	W.F.	3/ 9/58	2	43.3	44.1	+0.8	13.0	12.8	-0.2	111	116	+5	362[a]	407	+45	400[a]	456	+56
178123	W.F.	3/10/58	2	43.5	43.7	+0.2	12.8	12.5	-0.3	123	116	-7	333[a]	380	+47	396[a]	437	+41
178127	W.F.	3/18/58	2	41.9	42.7	+0.8	12.6	12.2	-0.4	113	118	+5	339[a]	391	+52	413	463	+50
178382	W.F.	3/30/58	2	43.1	43.5	+0.4	12.3	12.0	-0.3	113	120	+7	355[a]	398	+43	377[a]	451	+74
178383	W.F.	4/ 5/58	2	43.4	43.9	+0.5	12.1	12.0	-0.1	114	122	+8	351	392	+41	391[a]	450	+59
178430	W.F.	4/ 8/58	2	42.4	42.7	+0.3	12.3	12.0	-0.3	112	114	+2	320[a]	348	+28	379[a]	432	+53
178431	W.F.	4/10/58	2	42.3	42.5	+0.2	12.3	12.0	-0.3	108	111	+3	300	360	+60	371[a]	430	+59
178432	W.F.	4/14/58	2	42.2	42.7	+0.5	12.3	12.0	-0.3	108	117	+9	326	371	+45	373[a]	432	+59
178433	W.F.	4/15/58	2	42.2	42.3	+0.1	12.6	12.2	-0.4	106	110	+4	338[a]	362	+24	375[a]	437	+62
Current mill average				42.7	43.1	+0.4	12.5	12.2	-0.3	112	116	+4	336	379	+43	386	443	+57

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "Current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XXVII

MILL C -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
178116	W F	3/22/58	2	43 8	42.7	-1.1	11.7	11.9	+0.2	120	117	-3	321[a]	316	- 5	385[a]	390	+ 5
178117	W F.	3/22/58	2	44.0	42.6	-1.4	11.9	11.8	-0.1	123	118	-5	327[a]	317	-10	387[a]	392	+ 5
178120	W F	3/23/58	2	42.6	42.6	0 0	11.8	12.1	+0.3	120	118	-2	314[a]	331	+17	394[a]	392	- 2
178121	W.F	3/24/58	2	43.3	42.7	-0.6	12.0	12.0	0.0	120	116	-4	335[a]	329	- 6	387[a]	395	+ 8
178278	W.F	3/30 58	2	42 5	42.9	+0.4	11.8	12.0	+0.2	121	117	-4	321	358	+37	361[a]	404	+43
178279	W F	3/30 58	2	42.6	43 1	+0.5	11.9	12.0	+0.1	122	123	+1	320	314	- 6	369[a]	360	- 9
178354	W F	4 6 58	2	42.9	43.1	+0 2	11.5	11.7	+0.2	122	121	-1	318[a]	329	+11	382[a]	377	- 5
178355	W.F	4 7/58	1	42.1	42.2	+0.1	12.2	12.0	-0.2	120	118	-2	333[a]	335	+ 2	391[a]	364	-27
178492	W F.	4/13/58	1	43.8	43.6	-0.2	12 7	12.1	-0.6	115	119	+4	361[a]	328	-33	401[a]	378	-23
Current Mill Average				43.1	42.8	-0.3	12.0	12.0	0.0	120	119	-1	328	329	+ 1	384	384	0

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XXVIII

MILL D -- 42-LB LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
178118	W.F.	3/17/58	1	43.6	43.3	-0.3	12.8	12.9	+0 1	110	116	+ 6	305	321	+16	365[a]	387	+22
178119	W.F.	3/20/58	1	43.4	43.1	-0.3	12.8	12.9	+0.1	114	115	+ 1	285[a]	319	+34	355[a]	387	+32
Current Mill Average				43.5	43.2	-0.3	12.8	12.9	+0.1	112	115	+ 3	295	320	+25	360	387	+27

TABLE XXIX

MILL E -- 42-LB. LINERBOARD

178275	W.	3/14/58	4	42.3	42.9	+0.6	12.8	12.3	-0.5	101	106	+ 5	360[a]	355	- 5	368[a]	387	+19
178276	W.	3/20/58	2	42.2	42.2	0.0	13.1	12.8	-0.3	106	106	0	352	348	- 4	386[a]	399	+13
178358	W.	3/25/58	4	42.5	42.8	+0.3	12.4	12.0	-0.4	106	116	+10	340	323	-17	369[a]	360	- 9
178359	W.	4/ 1/58	2	41.8	42.1	+0.3	13.3	12.9	-0.4	103	107	+ 4	344[a]	308	-36	363[a]	347	-16
Current Mill Average				42.2	42.5	+0.3	12.9	12.5	-0.4	104	109	+ 5	349	334	-15	371	373	+ 2

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XXX

MILL F -- 42-LB LINERBOARD

File No.	Finish	Date Made	Mon No	Basis Weight, lb			Caliper, points			Bursting Strength p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
178126	AFIS	3/20/58	1	42.4	42.5	+0 1	11.8	11.8	0.0	112	105	- 7	308[a]	335	+27	406[a]	373	-33
Current Mill Average				42 4	42.5	+0 1	11.8	11.8	0.0	112	105	- 7	308	335	+27	406	373	-33

TABLE XXXI

MILL G -- 42-LB. LINERBOARD

178186	A F.	3/23/58	-	43.0	42.6	-0.4	11.5	11.7	+0.2	117	118	+ 1	363[a]	326	-37	387[a]	366	-21
178187	A F.	3/23/58	-	42.5	42.2	-0.3	11.2	11.2	0.0	113	112	- 1	350[a]	329	-21	391[a]	390	- 1
178188	A F	3/24/58	-	42.9	42.5	-0.4	11.9	12.1	+0.2	114	114	0	359[a]	351	- 8	393[a]	408	+15
178189	A F.	3/24/58	-	43.2	42 7	-0.5	12.1	12.2	+0.1	118	120	+ 2	351[a]	337	-14	394[a]	398	+ 4
178190	A F	3 28/58	-	42.8	43.0	+0.2	12.1	12.0	-0.1	117	116	- 1	363[a]	333	-30	402[a]	412	+10
178191	A F.	3/28/58	-	42.8	42 8	0.0	12.1	12.1	0.0	111	107	- 4	331[a]	337	+ 6	384[a]	420	+36
Current Mill Average				42.9	42.6	-0.3	11.8	11.9	+0.1	115	115	0	353	336	-17	392	399	+ 7

[a]This average includes the readings for one or more specimens which tore beyond the 3 7/8-inch limit

Note: All "Current Mill Average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XXXII

MILL H -- 42-LB. LINERBOARD

File No	Finish	Date Made	Mach No.	Basis Weight, lb			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
178356	WFlS	3/31/58	1	41.7	42 0	+0.3	12.7	12.5	-0.2	113	111	-2	302[a]	350	+48	347[a]	403	+56
178357	WFlS	3/31/58	1	41.7	42.0	+0.3	12.5	12 1	-0.4	113	116	+3	293	360	+67	337[a]	397	+60
178416	WFlS	4/13/58	1	43.4	41.8	-1.6	13.1	12.8	-0.3	108	111	+3	325	407	+82	374[a]	469	+95
178434	WFlS	4/14/58	1	42.7	41.8	-0.9	13.2	13.0	-0.2	108	111	+3	299[a]	320	+21	359[a]	420	+61
Current Mill Average				42.4	41.9	-0.5	12.9	12.6	-0.3	110	112	+2	305	359	+54	354	422	+68

TABLE XXXIII

MILL I -- 42-LB. LINERBOARD

178201	W B.	3/12/58	-	42.6	42.4	-0.2	12 2	11.7	-0.5	109	111	+2	378	343	-35	417[a]	397	-20
178202	W B	3/18/58	-	43.0	42.8	-0.2	12.1	11.7	-0.4	112	118	+6	363	331	-32	411[a]	404	- 7
178203	W B	3/18/58	-	42 5	42.3	-0.2	11.7	11.4	-0.3	118	118	0	367	351	-16	407[a]	400	- 7
Current Mill Average				42.7	42.5	-0.2	12.0	11.6	-0.4	113	116	+3	370	341	-29	412	400	-12

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XXXIV

MILL J -- 42-LB LINERBOARD

File No	Finish	Date Made	ch o	Basis Weight, lb. IPC	Mill	Diff	Caliper, points IPC	Mill	Diff.	Bursting Strength, p.s.i. gage IPC	Mill	Diff	Elmendorf Tear, g./sheet In IPC	Mill	Diff	Across IPC	Mill	Diff.
178277	FIS	3/31/58	1	42.3	42.6	+0.3	12.6	12.0	-0.6	115	108	-7	292	230	-62	345[a]	334	-11
178460	wFIS	4/ 7/58	1	44.1	42.8	-1 3	13.3	12.4	-0.9	111	108	-3	292[a]	259	-33	381[a]	358	-23
178461	wFIS	4/ 8/58	1	43 1	42.5	-0.6	13.4	12.5	-0.9	110	103	-7	286[a]	252	-34	349[a]	357	+ 8
Current Mill Average				43.2	42.6	-0 6	13.1	12.3	-0.8	112	106	-6	290	247	-43	358	350	- 8

TABLE XXXV

MILL K -- 42-LB. LINERBOARD

178179	FIS	3/23/58	2	44 0	44.9	+0.9	13.9	14	+0.1	130	121	-9	341[a]	390	+49	392[a]	430	+38
178180	FIS	3/24/58	2	43 3	44.3	+1.0	13 6	13.2	-0.4	118	120	+2	375[a]	367	- 8	371[a]	424	+53
178181	FIS	3/26/58	2	41.1	42 2	+1.1	12.8	12.5	-0 3	112	118	+6	367[a]	336	-31	349[a]	382	+33
178182	FIS	3/27/58	2	43 5	44 2	+0.6	14 0	13.5	-0.5	116	114	-2	355[a]	356	+ 1	379[a]	432	+53
178183	FIS	4/ 6/58	2	43.8	43.5	-0.3	13.2	13.6	+0.4	117	116	-1	333[a]	351	+18	367[a]	436	+69
178184	FIS	4/ 7/58	2	42.0	43 0	+1.0	12.8	12.6	-0.2	113	108	-5	361[a]	350	-11	382[a]	430	+48
178511	FIS	4/16 58	2	43.3	42.7	-0.6	13.7	13 1	-0.6	118	110	-8	325[a]	352	+27	386[a]	400	+14
178512	FIS	4/17 58	2	43.2	43.3	+0 1	13.6	13.2	-0.4	113	112	-1	349[a]	364	+15	373[a]	415	+42
Current Mill Average				43.0	43.5	+0.5	13.5	13.2	-0.3	117	115	-2	351	358	+ 7	375	419	+44

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XXXVI

MILL L -- 42-LB. LINERBOARD

File No.	Finisher	Date Made	Lcn. No.	Basis Weight, lb. IPC	Basis Weight, lb. Mill	Basis Weight, lb. Diff	Caliper, points IPC	Caliper, points Mill	Caliper, points Diff.	Bursting Strength, p.s.i. gage IPC	Bursting Strength, p.s.i. gage Mill	Bursting Strength, p.s.i. gage Diff	Elmendorf Tear, g./sheet In IPC	In Mill	In Diff.	Elmendorf Tear, g./sheet Across IPC	Across Mill	Across Diff.
178183	S F	3/21/58	7	44.6	44.4	-0.2	13.8	13.5	-0.3	98	102	+4	340[a]	335	- 5	391[a]	375	-16
178381	S F.	3/31/58	7	44.5	45.2	+0.7	13.8	13.8	0.0	108	114	+6	375[a]	380	+ 5	411[a]	440	+29
Current Mill Average				44 5	44.8	+0 3	13.8	13.6	-0.2	103	108	+5	357	357	0	401	408	+ 7

TABLE XXXVII

MILL M -- 42-LB. LINERBOARD

178204	F	3/25/58	2	43.0	43.2	+0 2	12.4	12.1	-0.3	112	112	0	305[a]	317	+12	359[a]	358	- 1
178205	F	3/26/58	2	42.0	42 0	0.0	12.3	12.1	-0.2	109	110	+1	294	275	-19	357[a]	343	-14
178325	F	4/ 1 58	2	43 0	43.1	+0.1	12.4	12.0	-0.4	114	112	-2	316	288	-28	406[a]	363	-43
178326	F	4/ 1/58	2	43.5	43.0	-0.5	12.3	12.1	-0.2	113	113	0	313	297	-16	381[a]	344	-37
178351	F	4/ 2/58	2	44 2	44.5	+0.3	12.4	12.2	-0.2	110	113	+3	333[a]	328	- 5	385[a]	354	-31
178352	F	4/ 2/58	2	43 2	43 5	+0 3	12 4	12.0	-0.4	111	113	+2	310	295	-15	367[a]	361	- 6
178352	F	4/ 4/58	2	42.9	43.2	+0.3	12 4	12.1	-0.3	112	113	+1	317	299	-18	371[a]	343	-28
Current Mill Average				43 1	43.2	+0.1	12.4	12.1	-0.3	112	112	0	312	300	-12	375	352	-23

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XXXVIII

MILL N -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mach No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
178124	w F	3/14/58	-	43.8	43.4	-0.4	12.9	12.4	-0.5	112	115	+3	353[a]	356	+ 3	362[a]	389	+27
178125	w F.	3/14/58	-	43.8	43.9	+0.1	12.9	12.7	-0.2	113	114	+1	348[a]	372	+24	364[a]	408	+44
178384	w.F.	4/ 2/58	-	42.3	41.7	-0.6	12.2	12.2	0.0	107	107	0	350	328	-22	377[a]	366	-11
178385	w F.	4/ 2/58	-	42.8	42.8	0.0	12.0	11.9	-0.1	113	111	-2	329[a]	337	+ 8	367[a]	394	+27
178493	w F.	4/11/58	-	43.4	43.0	-0 4	11.9	11.7	-0.2	112	115	+3	371[a]	373	+ 2	359[a]	377	+18
178494	w.F.	4/11/58	-	43.1	42.8	-0.3	11.8	11.6	-0 2	116	119	+3	376[a]	370	- 6	367[a]	392	+25
Current Mill Average				43.2	42.9	-0.3	12.3	12.1	-0.2	112	114	+2	355	356	+ 1	366	388	+22

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XXXIX

MILL O -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Cer No.	Basis Weight, lb			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff	IPC	Mill	Diff.
178382	F	4 2/58	-	42 6	44 2	+1.6	12.6	12.7	+0.1	101	110	+9	353[a]	328	-25	356[a]	349	- 7
178383	F	4 3/58	-	44 4	44 7	+0.3	13 0	12.4	-0 6	106	104	-2	329	297	-32	364[a]	330	-34
178384	F	4/ 4/58	-	42.9	43 4	+0.5	12.8	12.2	-0.6	105	105	0	331[a]	300	-31	352[a]	339	-13
178388	F	4, 9/58	-	43 6	43.7	+0 1	12.8	12.7	-0.1	108	107	-1	339[a]	329	-10	367[a]	343	-24
178389	F	4/10/58	-	43 7	43.6	-0.1	12.9	12.2	-0.7	108	111	+3	335[a]	286	-49	345[a]	339	- 6
178390	F	4/11/58	-	44.5	44.6	+0.1	13.0	12.8	-0.2	110	112	+2	369[a]	327	-42	366[a]	352	-14
178427	F	4/13 58	-	45 5	43 6	-1.9	13.3	12.8	-0.5	105	101	-4	336[a]	313	-23	350[a]	319	-31
178428	F	4/14/58	-	45 0	43.6	-1.4	13.0	12.3	-0.7	103	100	-3	325	285	-40	368[a]	312	-56
178429	F	4/15/58	-	44 8	44.4	-0.4	12.5	12 4	-0.1	104	107	+3	313	277	-36	357[a]	317	-40
Current Mill Average				44.1	44.0	-0.1	12 9	12.5	-0.4	106	106	0	337	305	-32	358	333	-25

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

NOTE: The "Current Mill Average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XL

MILL P -- 42-LB LINERBOARD

File No.	Finish	Date Made	Mach No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
178362	M.F.	2/24/58	1	43.5	42.8	-0.7	13.3	13.0	-0.3	112	110	-2	275[a]	243	-32	342[a]	336	- 6
178363	M.F.	2/28/58	1	42.5	42.3	-0.2	13.6	13.0	-0.6	113	116	+3	281[a]	239	-42	343[a]	329	-14
178364	M.F.	3/ 3/58	1	43.2	43.1	-0.1	13.2	13.1	-0.1	116	115	-1	265[a]	241	-24	336[a]	338	+ 2
178365	M.F.	3/ 6/58	1	43.4	42.7	-0.7	13.4	13.0	-0.4	112	111	-1	269[a]	242	-27	343[a]	331	-12
Current Mill Average				43.2	42.7	-0.5	13.4	13.0	-0.4	113	113	0	273	241	-32	341	334	- 7

TABLE XLI

MILL Q -- 42-LB. LINERBOARD

178115	Nat	3/23/58	2	44.5	44.0	-0.5	13.5	13.4	-0.1	112	107	-5	353[a]	301	-52	406[a]	368	-38
Current Mill Average				44.5	44.0	-0.5	13.5	13.4	-0.1	112	107	-5	353	301	-52	406	368	-38

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "Current Mill Average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--APRIL 1 THROUGH APRIL 30, 1958 (continued)

TABLE XLII

MILL S -- 42-LB LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb			Caliper, points			Bursting Strengtn, p.s.i gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
178353	A F.	3/30/58	4	42.2	42.0	-0.2	11.6	11.4	-0.2	110	107	-3	365	352	-13	385[a]	391	+6
Current Mill Average				42.2	42.0	-0 2	11.6	11.4	-0.2	110	107	-3	365	352	-13	385	391	+6

TABLE XLIII

MILL R -- 47-LB DRUM LINERBOARD

No samples submitted

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit

Note: All "current mill average" data are calculated from the totals of the individual readings.